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BAQ Engineering Services Division

Company Name:	Caterpillar Hydraulics	Permit Writer:	Stephanie L. White
Permit Number:	2140-0139-CA-R2	Date:	DRAFT

DATE APPLICATION RECEIVED: An application was submitted on July 30, 2015. It was withdrawn on September 11, 2015. The current application was received on September 14, 2015.

FACILITY DESCRIPTION

Caterpillar Hydraulics manufactures and/or assembles hydraulic components for heavy construction equipment in Sumter County. The SIC code is 3593 – Fluid Power Cylinders and Actuators. The NAICS code (2007) is 333995 - Fluid Power Cylinder and Actuator Manufacturing.

PROJECT DESCRIPTION

The facility has requested a second revision to construction permit 2140-0139-CA. The following information summarizes the construction permitting history of this construction permit:

The facility was issued a construction permit on July 19, 2013 for the installation of an automated painting system. A modified permit (2140-0139-CA-R1) was issued on October 3, 2014 with a condition added (Condition D.2) to indicate that all applicable requirements from the original construction permit were included in the revised version. Condition D.4 in the original permit was renumbered as D.5, and the applicable unit IDs were specified in Condition D.5.

On March 26, 2015, the Department responded to a request for an exemption for the use of an acetone/methyl ethyl ketone blend at the painting system, with an estimated use of 9,500 gallons per year. Based on the information provided, the Department agreed that the use of the material was exempt from permitting.

The revised permit application includes an updated description of the painting system equipment at the facility, including the additional manual paint booth and additional wash tank that were not identified in the original permit application. Errors were also identified in the original permit application's modeling input data which have been corrected with this permit. Several HAP, TAP, and/or VOC compounds that were not included in the original application have been added: methyl ethyl ketone, ethylene glycol monobutyl ether, and toluene. One pollutant that was originally listed in the original permit was not included in the revised application: hexamethylene diisocyanate. Hexamethylene diisocyanate is a constituent in coating catalysts; however, it is consumed in the reaction. A manual paint booth (ID PB-04) with a voluntary dry filter (CD-04) was installed at Emission Unit 03.

The facility has requested a synthetic minor construction permit to limit VOC emissions to less than 100 tons per year in order to avoid a Title V operating permit. The facility was advised to perform monitoring and recordkeeping to demonstrate that the current emissions are below the major source thresholds.

Several equipment items that were listed in the original permit equipment list will be removed from the revised permit: PT-T1, PT-T1, PT-T3, PT-T4, PT-T5, CO-01, DO-01, CT-01. The sizes of several existing exempt tanks were modified (PT-T1, PT-T2, PT-T3, PT-T4, PT-T5, and PT-T6). One exempt tank was not installed per the original construction permit (PTW01). Two existing exempt burners were increased in size: from 1.5 million BTU/hr to 2.0 million BTU/hr, and from 2.5 million BTU/hr to 3.5 million BTU/hr.

COLLOCATION DETERMINATION

Another Caterpillar facility (Caterpillar Precision Pin Products – 2140-0125) is located within ¼ miles (1355 Wise Drive, Sumter, SC 29153) but produces other products with different pollutants. The facility produces linkage pins and also has a heat treating and hard chromium plating process.

SPECIAL CONDITIONS, MONITORING, LIMITS

In the original construction permit, the facility had an operating limit of 7,300 hours per year to comply with the modeled emission rates for Standard 8. This limit will be removed from the revised permit since it is no longer necessary to demonstrate compliance with the standard, due to changes in the product formulations and the implementation of the synthetic minor limit for VOC emissions.



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EMISSIONS

FACILITY WIDE EMISSIONS		
Pollutant	Uncontrolled Emissions	Controlled/Limited Emissions
	TPY	TPY
PM	68.87	2.39
PM ₁₀	68.87	2.39
PM _{2.5}	2.06	0.483
SO ₂	1.5	0.038
NO _x	25.91	3.76
CO	7.77	3.00
VOC	185.41	100
Cumene (H, T, V)	0.215	0.111
Naphthalene (H, T, V)	0.878	0.463
Ethylene Glycol Monobutyl Ether (H, T, V)	2.452	1.295
Formaldehyde (H, T, V)	0.011	0.006
Methyl Ethyl Ketone (T, V)	94.887	51.654
Xylene (H, T, V)	0.495	0.254
Toluene (H, T, V)	0.026	0.014
Ethylbenzene (H, T, V)	0.102	0.052
Total HAP	4.18	2.19

OPERATING PERMIT STATUS

The facility requested a State operating permit on March 9, 2015 to incorporate construction permit 2140-0139-R1; however, due to changes in operations at the plant, it was necessary to make additional revisions to the construction permit. Due to the implementation of synthetic minor limits in the revised construction permit, the facility is required to request a Conditional Major operating permit in accordance with permit condition J.4.

REGULATORY APPLICABILITY REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	This section of the regulation is applicable to the facility. The facility has the potential to emit 100 tons per year or more of VOC. The facility has requested a synthetic minor limit of less than 100 tons per year of VOC to avoid the requirements of the Title V Operating Permit program.
Standard No. 1	This standard does not apply to the facility. The furnaces are direct-fired exempt activities.
Standard No. 3 (state only)	This standard is not applicable to the facility. The facility does not combustion any waste.
Standard No. 4	The facility is subject opacity and PM limitations from this regulation. The opacity is limited to 20%. The maximum process weight rates for the prime coat paint booth (ID PB-01) and topcoat paint booth (ID PB-02) is 68.75 ton/hr, and the maximum process weight rate for the touch-up paint booth (ID PB-03) and second manual paint booth (PB-04) is 2.00 ton/hr. The uncontrolled emission rate is considerably less than the PM allowable limit. The dry filters that were originally permitted (CD-01 through CD-03) will be inspected daily with on-site recordkeeping. Filter CD-04 does not require



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Regulation	Comments/Periodic Monitoring Requirements
	monitoring, since it is a voluntary control device.
Standard No. 5	<p>This standard is not applicable to the facility.</p> <p>The facility performs surface coating of miscellaneous metal parts and products, as categorized in Part F of the standard; however, it is not considered an existing source, as described in Part B – General Applicability, Section 1, since the process was originally installed after July 1, 1979. In addition, the facility does not have the potential emissions of more than 550 pounds in any one day or more than 150 pounds in any one hour.</p>
Standard No. 5.2	<p>This standard does not apply to the facility.</p> <p>The NO_x emissions are from exempt fuel burning operations since the stationary sources are less than 10 million BTU/hr, per Section I(b)(1), and the emergency power generators are less than 150 kW rated capacity, per Section I(b)(2)a.</p>
Standard No. 7	<p>This standard does not apply to the facility.</p> <p>The facility is not one of the 28 categories identified in the standard that are subject to the 100 ton per year limit to be considered a major stationary source. The facility does not have the potential to emit greater than the threshold quantity of 250 tons per year that would apply to this source.</p>
61-62.6	The facility does not have any fugitive particulate matter sources.
40 CFR 60 and 61-62.60	<p>Some subparts of these regulations are applicable to the facility.</p> <p>The facility has two emergency generators that are subject to S.C. Regulation 61-62.60 and 40 CFR Part 60, Subparts A and IIII – Standards Of Performance For Stationary Compression Ignition Internal Combustion Engines.</p>
40 CFR 61 and 61-62.61	<p>These regulations do not apply to the facility.</p> <p>The facility does not have sources that are subject to this standard for the following pollutants: arsenic, asbestos, benzene, beryllium, coke oven emissions, mercury, radio nuclide, radon, or vinyl chloride.</p>
40 CFR 63 and 61-62.63	<p>Some subparts of these regulations are applicable to the facility.</p> <p>The facility is not a major source for HAP emissions, since the HAP emissions are less than 10 tons per year for a single HAP and 25 tons per year for total HAPs.</p> <p>The original construction permit indicated that the facility had an exempt welding operation (EX-W-01) that was subject to the requirements of S.C. Regulation 61-62.63 and 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants, Subparts A and XXXXXX: Area Source Standards For Nine Metal Fabrication And Finishing Source Categories. Upon further review, it was determined that this rule was incorrectly applied to the welding operation. The welding operation is not the primary operation at the facility. In addition, since the painting operation does not use paints that contain greater than 1% of cadmium, chromium, lead, or nickel, the facility is not subject to the requirements of this subpart.</p> <p>The facility has two generators that are subject to S.C. Regulation 61-62.63 and 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants, Subparts A and ZZZZ: Stationary Reciprocating Internal Combustion Engines.</p>
61-62.68	<p>This regulation does not apply to the facility.</p> <p>This facility does not store or process any of the chemicals listed in the regulation.</p>
40 CFR 64	This regulation does not apply to the facility.



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Regulation	Comments/Periodic Monitoring Requirements
	Since the facility has requested a synthetic minor limit for VOC emissions, the facility is not major source for criteria pollutant or HAP emissions.

AMBIENT AIR STANDARDS REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	The facility exempt from conducting a modeling analysis to demonstrate compliance with this standard. The facility has two emergency generators that are less than 150 kW rated capacity. The other sources of criteria pollutants (not including VOC) have controlled emissions of less than 5 tons per year. These sources are all exempt from an air dispersion demonstration.
Standard No. 7.c	The facility exempt from conducting a modeling analysis to demonstrate compliance with this standard. The facility has two emergency generators that are less than 150 kW rated capacity. The other sources of criteria pollutants (not including VOC) have controlled emissions of less than 5 tons per year. These sources are all exempt from an air dispersion demonstration.
Standard No. 8 (state only)	The facility is subject to the requirements of this standard. The facility has demonstrated compliance per the modeling summary dated November 13, 2015.

PUBLIC NOTICE

A public notice was not required for this permit.

This construction permit will undergo a 30-day public notice period to establish synthetic minor limits in accordance with SC Regulation 61-62.1, Section II(N). This permit was placed on the SCDHEC Public Notice Website on December 9, 2015. The comment period was open from December 9, 2015 to January 7, 2016.

ADDITIONAL PUBLIC PARTICIPATION

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.